Case Report

Pure primary squamous cell carcinoma of breast: A rare entity

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ABSTRACT

Squamous cell carcinoma (SCC) of the breast is very rare malignancy, and only few cases have been reported in the literature. Also, it is aggressive in nature, and the standard treatment is still debated. We share our experience of a case of primary SCC of breast which was initially misdiagnosed as adenocarcinoma on fine needle aspiration cytology but later confirmed to be pure primary squamous cell carcinoma of breast on histopathological examination.

Key words: Breast, primary, squamous cell carcinoma

INTRODUCTION

Pure primary squamous cell carcinoma (PPSCC) of the breast is an uncommon tumor. The reported incidence varies between 0.1% and <0.04% of all breast carcinomas.[1-3] These tumors are considered aggressive in behavior with a poor prognosis and most often seen in elderly women.[4] It is important to distinguish between true squamous cell carcinoma (SCC) of the breast and other possible primary sites of SCC in the body with breast metastasis especially gastrointestinal, respiratory and urogenital SCCs.[5] Clinical and radiological features are nonspecific. PPSCC is usually hormone receptor negative tumor and hormone-based therapy may not be successful in producing the desired result. The rarity of the disease with diagnostic and management problems is discussed.

CASE REPORT

A 50-year-old female patient had a complaint of a lump in her right breast for the past 3 years which was gradually increasing in size. Fine needle aspiration cytology from the lump done at some private center was suggestive of malignancy favoring adenocarcinoma. She received two cycles of cyclophosphamide, adriamycin, 5-flourouracil regime. However, she then discontinued the treatment. The lump continued to increase in size and ulcerated with blood mixed discharge from the lump. She also developed right axillary swelling. Then, she came to our outpatient department. She was multiparous and had breast fed all her children. There was no history of smoking or alcohol intake. Also, there was no family history of breast cancer.

On examination, there was a lump in the right breast of size approximately 6 cm × 5 cm with ulceration of the skin overlying the lump and mild blood mixed discharge. Ipsilateral axillary lymph node was enlarged. It was mobile and approximately 3 cm × 2 cm in size. Left breast and axilla were normal. Also, systemic examination revealed no abnormality. Routine blood investigations, chest X-ray and ultrasound abdomen, were within normal limits. There was no suggestion of any other primary site. Biopsy of the lesion was suggestive of SCC.

The patient was given four cycles of neoadjuvant chemotherapy in the form of injection docetaxel and carboplatin. The breast lump and axillary swelling both decreased in size. The patient then underwent right modified radical mastectomy with axillary lymph node dissection. Postoperative course was uneventful.

Histopathology of the tumor mass was suggestive of keratinizing SCC occupying >90% of the tumor mass

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with presence of lymphatic invasion. No vascular invasion was identified. Skin was infiltrated by the tumor. Nipple and areola were uninvolved. Three lymph nodes showed evidence of metastasis with keratinizing SCC [Figures 1 and 2]. The tumor was positive for cytokeratin (CK5/CK6) and was triple negative.

The patient was given two cycles of adjuvant chemotherapy with the same drugs- docetaxel and carboplatin followed by external beam radiotherapy to the chest wall and drainage area.

DISCUSSION

Squamous cell carcinoma of the breast is a rare condition. The disease is aggressive with poor prognosis that may be comparable with poorly differentiated ductal carcinoma of the breast.[2,6,7] The disease is usually hormone receptor negative.[7] Certain criteria need to be met before the diagnosis of PPSCC of the breast can be made. According to Macia *et al*. diagnostic criteria, SCC of the skin overlying the breast must be excluded, there should be no other site of primary SCC and other neoplastic elements as ductal or mesenchymal should not be present.[8]

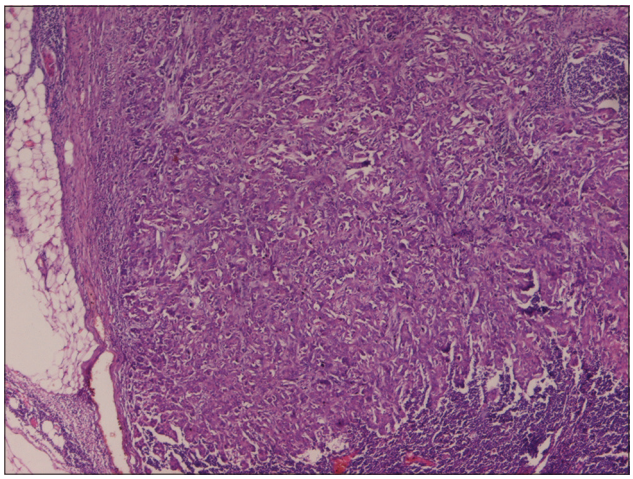

Figure 1: Low power view of squamous cell carcinoma of breast, sheets of malignant tumor cells are seen. At the periphery fibrofatty tissue of the breast can also be seen (H and E, 10×)

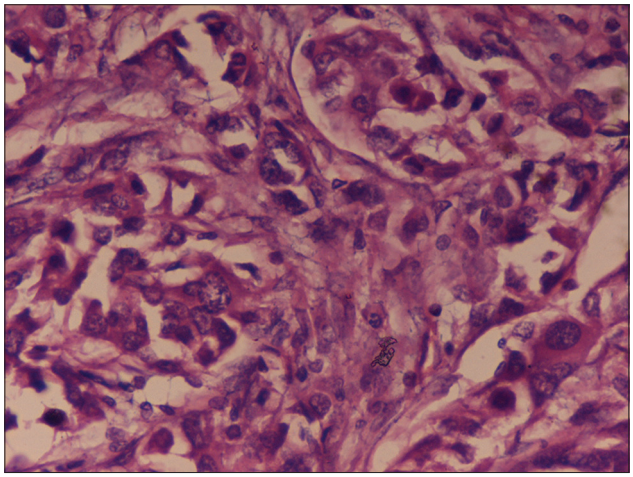

Figure 2: Section examined show sheets of malignant squamous cells with evidence of keratinization (H and E, 40×)

It is not associated with any specific radiological features although clinical presentation may be atypical. There are examples of patients presenting as breast abscess who were later on confirmed to be primary SCC of the breast.[3] An important macroscopic feature that has been reported in the literature is that SCC of the breast is cystic in >50% of the cases.[1,9]

Some case reports in the literature suggest that SCCs of the breast are less commonly associated with lymphatic spread than adenocarcinomas.[4,10] However in our case, axillary lymph node metastasis was present.

Squamous cell carcinoma of the breast is aggressive in nature and the prognosis is poor.[7]

There is still controversy regarding the standard treatment. Chemotherapeutic drugs commonly used in adenocarcinoma have not been found to be effective. Hormonal therapy may be used for estrogen receptor and progesterone receptor positive tumors, although clear evidence is lacking.[7]

Squamous cell carcinoma of the breast is usually epidermal growth factor receptor (EGFR) positive.[7,11] Therefore EGFR receptor-based therapies need to be considered. EGFR inhibitors with taxane and platinum-based chemotherapy should be studied.

CONCLUSION

Pure primary squamous cell carcinoma of the breast is an extremely rare and aggressive tumor with basal-like phenotype and is treatment-refractory as most of these tumors are "triple negative". Effective adjuvant or neoadjuvant therapy is not available, and more studies and future research including a large series of these tumors are needed to develop tumor specific therapy.

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